February 2, 2005

TRAFFIC ENGINEERING DIRECTIVE
402-3

Supersedes 402-2

SUBJECT: TYPICAL PLACEMENT OF TRAFFIC SIGNAL FACES FOR VARIOUS INTERSECTION CONFIGURATIONS

The following criteria establish guidelines for the placement of traffic signal faces giving consideration to the specific conditions set by roadway geometrics and signal phasing. It is recognized, however, that there are instances where these guidelines may not be practical, or where geometrics and phasing are not as described in this directive. When either is the case, these guidelines should be followed as closely as possible.

The primary requirement is that two signal heads must be visible to approaching drivers, and that the rules for the 40 degree CONE OF VISION as described in the Manual on Uniform Traffic Control Devices (MUTCD) shall be followed. The minimum distance from stop bar to a signal face shall be 40 feet and the maximum distance should be 150 feet. Any proposal to install signal heads more than 150 feet from the stop bar must be approved by the Traffic Engineering Division before proceeding.

Signal faces should be placed in accordance with the horizontal and vertical criteria, detailed below, and should also be visible to pedestrian traffic. Where the faces for vehicular traffic are not visible to the pedestrian, additional signal faces with 8-inch lenses should be placed in a visible location. The use of cutaway rather than tunnel visors may also enhance visibility. Pedestrian heads should be considered where pedestrian traffic is significant or where conditions meet those described in 4E.03 of the MUTCD.

VERTICAL LOCATION OF TRAFFIC SIGNAL FACES

The bottom of the housing of a signal face not mounted over a roadway shall not be less than 12 feet nor more than 15 feet above the sidewalk or, if none, above the pavement grade at the center of the highway. The standard height shall be 10 feet + or – 3 inches for pedestal-mounted pedestrian signals and 12 feet + or – 3 inches for pole-mounted vehicular signals.

The bottom housing of a signal face suspended over a roadway shall be 18 feet + or – 3 inches above the pavement grade at the center of the roadway. The maximum height shall be 19 feet.

HORIZONTAL LOCATION OF TRAFFIC SIGNAL FACES

Signal faces for any one direction or approach shall not be less than 8 feet apart measured horizontally between centers of faces. More specific guidelines are as follows:

1. **Single-Lane Approach**
   One signal head is normally placed 2 feet right of the centerline of the approach and the second head is placed 8 feet to 10 feet right of that near the right edge line).

2. **Two-Lane Approach**
   One signal head is normally placed over the center of each approach lane. However, if the second lane is a left turn lane, and the heads facing the left turn lanes block each other, the left turn signal head on each approach is to be placed 2 feet right of the center of the approach lane. The left turn heads in opposite directions will then be offset 4 feet from each other.

3. **Exclusive Right Turn Lane**
   In addition to the head over the center of the right turn lane, a separate signal head shall be mounted on the signal support pole on the far right side of the intersection.

4. **Three-Lane Approach**
   One signal head is normally placed over the center of each approach lane. However, if the heads facing the left turn lanes block each other, the left turn signal head on each approach is to be placed 2 feet right of the center of the approach lane. The left turn heads in opposite directions will then be offset 4 feet from each other.

5. **Four or More Lanes Per Approach**
   One signal head is normally placed over the center of each approach lane. However, if the heads facing the left turn lanes block each other, the left turn signal head on each approach is to be placed 2 feet right of the center of the approach lane.

Once these basic requirements are satisfied, it may be necessary or desirable to install additional supplemental signal heads to address specific geometric or sight distance issues.

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Barry Warhoftig, P.E
Director – Traffic Engineering Division